(for, *certes*, no woman would so gracefully and amiably submit to having her beauty spoilt) is admirably posed and drawn. (315), "Floretti de Nerac, at the Spring of la Garenne." A concentration of incongruous excellencies and defects, elegant to a fault, exhibits a charm of line, and a simple grace in the chosen attitude that more than counterbalance the stiffest of stiff petticoats, and the most alabaster-like toes that were ever picked out with pink.

Mr. Wm. Lee, who seems to have adopted a style not dissimilar to Mr. J. J. Jenkins, shows considerable improvement on preceding exhibitions, (86), "Asking a Blessing," manifests great perception of the picturesque nature of every-day-life incidents. The picture is invested with an apparent truth without vulgarity, and refinement widely removed from prettiness.

Miss Setchell, of "Momentous Question" renown, has by no means shown an advance in her (258) "Jesse and Colin:" the effects of the ill-drawing about the arms of the male figure is hardly counterbalanced by the lovely head of Jesse (suggestive of Hogarth) or by the draperies, be they never so rich in colour and well painted.

W. Bennett (a name that has lately added strength to the landscape department) is affixed to some *quarter of a hundred works*, that vie in crispness and natural freshness with the best specimens of water-colour depictions: a charming feeling for sober grey tones is observable, not unlike, in some respects, David Cox. (40) "Harlech Castle, North Wales; (59) "A Road through the Forest;" (82) "Bolton Abbey, Yorkshire;" (120) "Sunset—Clapham Common;" (121) "A Forest Glade;" (170) "A Woodland Scene," and others, bear witness to his industry and ability.

Mr. Charles Davidson, another of nature's pupils, and a strict attendant of the only true school, revels in shady nooks, under leafy canopies: he is the Creswick of water colours. (23) "A Study of Beech Trees, Knowle-park;" (57) "Belton-park, Yorkshire;" (141) "Entrance to Hook-wood, Seven-oaks;" (203) "Near the Duchess's-walk, Knowle-park,"—a composition in which he has been ably assisted by Mr. Harrison Weir,—force themselves upon the attention of all by their truth and power.

The most important contribution of Mr. Penley is a "Sunset,—A Coast Scene" (97), painted with vigour and knowledge of what he was about.

Mr. Carrick describes in a broad masterly way some (104) "Highland Emigrants,—Morning of the Departure," a striking drawing, with nice feeling for colour: another week's work might be well bestowed.

The drawings by Mr. Vacher bear witness to time well spent during his late sojourn, and show great improvement in execution. (44) "The Bazaar, Algiers." is the most important of his exhibitions, and is entitled to admiration.

It would take more room than we can spare to praise in turn, as they deserve, the many clever effusions of Messrs. Fahey, Howse, Hardwick, Maplestone, Oliver, Rowbotham, Weigall, &c., the exquisite specimens of floral painting of Mrs. Margetts, and the highly meritorious works of Miss Fanny Corbaux, Miss Jane Egerton, Mrs. Harrison, Mrs. Harris, or the successful bits of nature contributed by Mrs. Oliver and Miss Fanny Steers. Suffice it, then, to say, that all have creditably exerted themselves to render their gallery very attractive.

ON THE GYPSUM FOUND NEAR PARIS, AND ITS APPLICATION AS A PLASTER.*

AMONGST the local advantages enjoyed by our professional brethren of the French capital, that afforded by the unlimited supply of a very superior description of plaster may be ranked as one of the most important. The facilities afforded by the railway and steamboat transit having at length put us (to a certain extent) upon a footing of equality in this matter with them, it becomes important to examine the nature of the material thus offered for our use.

Regarding plaster mechanically, it may be considered as a species of lime, which is susceptible of being employed without admixture with any other ingredient than water, and of attaining with singular rapidity a moderate degree of hardness. These qualities would render its employment in all cases very desirable, were it of a nature to resist the influence of the atmosphere. But unfortunately it is utterly incapable of resisting the effects of humidity when used alone. * * *

The gypseous deposits near Paris form a very distinct and easily identified group, or sub-division, which comprehends (at the same time as the gypsum) alternating beds of marl, either calcareous or argillaceous. These beds follow an order precisely identical throughout the whole district, from the neighbourhood of Meaux to Meulan. Some beds are absent in particular cantons; but those which are still to be met with occupy the same relative positions.

The gypsum immediately overlies the calcareous beds Cuvier designated as the "calcaire marin;" and their appearance in the landscape of the neighbourhood of Paris is very remarkable, even in a picturesque point of view. They cap the hills of the older and harder formations; and appear to have suffered more severely from the denuding effects of the cataclysms which gave rise to the existing valleys, than the subjacent rocks. They thus form, as it were, a second range of hills (sometimes conical, as at Montmartre, Les Buttes Dorgemont; or elongated, as at Chaumont and Belleville, Triel, &c., superposed on a first series of hills, bearing all the characteristic marks of the calcareous ranges.

We find at Montmartre and at Belleville, where the formation exists in the most perfect development, that there are three masses of gypsum of various thicknesses.

The quality of the gypsum is not the same through the whole thickness of the different masses. Great care is then required in so mixing the different sorts of stone as to secure an uniformity in the plaster obtained by the burning. Some of the beds are reserved for special uses; the hard beds in the remaining portions, require to be mixed with the softer ones. As might naturally be expected, this variety introduces a complication in the manufacture, which frequently gives rise to improper fabrication, and opens the door to much fraud. Indeed, the fabrication of plaster near Paris, still more in the departments, is liable to all the reproaches that we so unsparingly address to our own cement manufactures. Such must always be the results of unlimited competition, and as long as price is made of more importance than quality such they will remain.

The mode of burning usually adopted is very rude. It consists simply in building, within three walls, covered with a rough fixed roof, a series of arches, 1 foot 8 inches wide by 2 feet 4 inches high, with piers formed of gypseous stones, as are also the arches. These are then filled up to a height of 13 feet with stones, so arranged that the largest are at the bottom, the smallest at the top. The arches are filled in with fire-wood, which is set light to, and the fire kept up so as to maintain the baking for twenty-four hours. The dimensions of these kilns are such as to enable them to hold from seventy to seventy-five tons. In some of the quarries a more rational style of burning is adopted, which consists in passing the already pulverized stone through cylinders, which revolve in an open fire. I have, also, in one of Mr. Weale's treatises, mentioned an application of overheated steam to the same purpose; but the inquiries I made in Paris, about a month since, lead me to believe that it has not yet been fairly tried.

Indeed, there is always a difficulty in introducing any new process in the ordinary arts of life, such, for instance, as the one which meets us on the threshold in the use of the French plaster. Near Paris, the workmen have always been accustomed to employ plaster burnt in immediate contact with the wood. In that process the brees become necessarily mingled with it, and we find now that the men have come to consider the grey colour they communicate as an indication of a superior quality. The Paris workmen, in fact, do precisely the reverse to what our workmen do: upon the same principle, nevertheless, viz.—from an irreflective habit. They dislike a white plaster; we attach far too much importance to it. Truth, as in most cases, lies in the mean. The absence of the brees certainly does not diminish the value of the plaster: the extreme whiteness we contend for in London is for the most part obtained by the use of a softer description of stone, or by the admixture of some extraneous ingredient.

The operation of burning the plaster stone is, after all, only effected for the purpose of dehydrating, or driving off the water of crystallization from the gypsum. Before this is done the stone is hard; afterwards, it becomes pulverulent and floury. The "rationale" of its use is, simply to present such a quantity of water as is necessary to restore it to the original state, when it resumes its natural hardness, with a commencement of a confused crystallization. Now this action may be, and is, carried on irrespective of colour; that is to say, at least, the presence of the wood ashes, which gives rise to the grey tint the Paris workmen require, does not affect the combination with the water. Our own very white plasters owe their beautiful colour to the absence of the carbonates of lime, or the marls, which, in fact, communicate very superior qualities to the stones yielding plaster less purely white.

To secure a good quality of plaster, it is advisable to apply a moderate heat in the beginning, which is to be augmented gradually. When the plaster is not sufficiently burned, it becomes dry and sandy: in this state it does not set with any degree of hardness. When it is overburnt, it also loses its adhesive properties: it ceases to have what the workmen call "de l'amour:" it will not cling to the fingers, nor has it the rich unctuous quality which characterises the well-burnt plaster. As soon as it is burnt, it should be ground and employed as soon as possible after the manipulation is completed. * * * *

In Paris the mode of using plaster is to employ it pure and free from mixture. The very low price at which it is sold, and the comparatively high price of sand, dispense with the motives of economy which render mixtures almost indispensable in our case. The town of Paris pays, for its municipal works, at the rate of 12s. 9½d. per ton of plaster, whereas it cannot yet be had in London for less than about 40s. per ton. Whilst the practice in France is to use plaster pure, I am disposed to think that the mixture of sand, so far from being prejudical, is even desirable, if confined within reasonable limits. We find that in re-assuming the state of hydrated sulphate of lime, the plaster goes through an imperfect crystallization; and this action is accompanied by a singular re-arrangement of the molecules. This causes the plaster to swell when used alone; and to such an extent, that it is impossible even to finish a ceiling close up to a wall at once. Now the introduction of a body so full of inequalities as the coarse, sharp sands, must afford room for the free action of this expansion; and, at the same time, the facettes of the sand must offer, as it were, nuclei, which cannot but be favourable to the crystallization. It is, doubtlessly, on these principles that we can explain the superiority of the plaster containing the wood brees, which does become harder than the purer plasters, if used alone. Too large a proportion of sand should be avoided; but very fair work can be executed even with a mixture in the proportions of two of sand to one of plaster. Under any circumstances, the finishing coat should be pure. Subsequent experience will decide whether the use of two materials of this kind do not expose the work to unequal contractions, likely to cause fissures, or cracks.

The plaster made near Paris sets with a rapidity very much greater than any material we are accustomed to for plastering purposes, and, for very large uniform surfaces, perhaps this is a difficulty. The workmen have not the time to work the floating coats with the mathematical correctness we usually exact in our country. But, to a certain extent, this objection may be obviated by slight differences in the mode of preparing the plaster, or by altering the quantity of water in proportion to the positions in which the meterial is required to be used. Thus, if all the strength of the plaster is needed, the smallest quantity of water is introduced; about as much in bulk as the plaster itself occupied. This is called, by the workmen "gâcher serre" (stiff guaged). When it is necessary to work and rework the face, as in setting coats, more water is added, or the plaster is said to be "gâché clair" (guaged thin). Habit alone can fix the precise proportions, for it is impossible to arrive constantly at the same results in the burning. For the very finest works, the workmen make what they call a "coulis;" this is run in in a semi-fluid state. Plaster which has been thus treated with an excess of water, does not acquire the tenacity nor the hardness of that

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